



**NASA-KSC/EX-E High Education  
Internship Project & Abstract Form**

Please provide this information requested to: [rose.m.austin@nasa.gov](mailto:rose.m.austin@nasa.gov)  
Telephone: 321.867.6481

<b>Full name (First MI Last):</b>	Christina M Fields
<b>Academic Institution:</b>	University of Central Florida
<b>City, State Zip Code:</b>	Orlando, FL 32816
<b>Program Hired Under (Funding Source):</b>	KSC FO
<b>Name of Branch or Division:</b>	NE-C1
<b>Desk Location (Bldg Name, Cube #):</b>	OSCII 3113W2
<b>Work Phone (If Applicable):</b>	
<b>Cellular Phone:</b>	
<b>Degree of Study:</b> (i.e. MBA, BS in Electrical Engineering, etc) Major & Minors	BS in Electrical Engineering
<b>Expected Graduation (Month/ Year):</b>	12/2014
<b>Project Title:</b>	Develop a Model Component
<b>Project / Abstract Summary:</b> (Approximately 300 words) One complete paragraph in itself (not an introduction). It should indicate subjects while also stating objectives of the project. Newly observed facts and conclusions of project discussed must be stated in summary form. Readers should be able to understand your project and what you completed in your abstract.	
<p>The Spaceport Command and Control System (SCCS) Simulation Computer Software Configuration Item (CSCI) is responsible for providing simulations to support test and verification of SCCS hardware and software. The Universal Coolant Transporter System (UCTS) is a Space Shuttle Orbiter support piece of the Ground Servicing Equipment (GSE). The purpose of the UCTS is to provide two support services to the Space Shuttle Orbiter immediately after landing at the Shuttle Landing Facility. The Simulation uses GSE Models to stand in for the actual systems to support testing of SCCS systems during their development. As an intern at KSC, my assignment was to develop a model component for the UCTS. I was given a fluid component (drier) to model in Matlab. The drier was a Catch All replaceable core type filter-drier. The filter-drier provides maximum protection for the thermostatic expansion valve and solenoid valve from dirt that may be in the system. The filter-drier also protects the valves from freezing up. I researched fluid dynamics to understand the function of my component. I completed training for UNIX and Simulink to help aid in my assignment. The filter-drier was modeled by determining affects it has on the pressure, velocity and temperature of the system. I used Bernoulli's Equation to calculate the pressure and velocity differential through the dryer. I created my model filter-drier in Simulink and wrote the test script to test the component. I completed component testing and captured test data. The finalized model was sent for peer review for any improvements.</p>	
<b>If you are writing a paper for school or specific internship program, provide the following:</b>	
<b>Paper Title:</b>	Developing a Model Component
<b>Mentor Name:</b>	Cheryle Mako
<b>Mailcode:</b>	NEC10